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09/753,122	12/29/2000	John P. Proctor	M-7194-2P US	1908

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EXAMINER

DUNWOODY, AARON M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,122

Applicant(s)

PROCTOR ET AL. 

Examiner

Aaron M Dunwoody

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-29, 31-35 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-29, 31-35 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-23, 25, 27-29, 31-35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3290770, Silverman et al.

In regards to claim 1, Silverman et al discloses a duct joining system, comprising a first duct (101) having a male end; a flexible seal and locking mechanism (117 or 118) retained on the male end of the first duct; and a second duct (100) having a female end having a first cross sectional area and a first bead of a second cross sectional area that is greater than the first cross sectional area, the second duct may be joined to the first duct by sliding the female end over the male end, the flexible seal and locking mechanism being compressed within the first cross sectional area, the flexible seal and locking mechanism expanding into the first bead to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the second duct greater than a resistance to the joining of the first duct and the second duct.

In regards to claim 2, Silverman et al discloses the flexible seal and locking mechanism being a flexible gasket held on the male end at an angle relative to normal and away from the end of the first duct.

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In regards to claim 3, Silverman et al discloses the resistance to the separation of the first duct and the second duct being at least three times greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 4, Silverman et al discloses a second bead positioned after the flexible seal and locking mechanism that acting as a stop bead to ensure the second duct is properly positioned with the first duct when the first duct and the second duct are joined.

In regards to claim 5, Silverman et al discloses a third bead on the first duct located between the flexible seal and locking mechanism and the end of the first duct, wherein the third bead has a diameter that is less than the diameter of the second bead.

In regards to claim 6, Silverman et al discloses one of the first duct and the second duct being a fitting.

In regards to claim 7, Silverman et al discloses a duct joining system comprising a first duct having a female end; a flexible seal and locking mechanism retained within the female end of the first duct; and a second duct having a male end having a first cross sectional area and a first bead of a second cross sectional area that is less than the first cross sectional area, the second duct may be joined to the first duct by sliding the female end over the male end, the flexible seal and locking mechanism being compressed by the first cross sectional area, the flexible seal and locking mechanism expanding into the first bead to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the second duct greater than a resistance to the joining of the first duct and the second duct.

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In regards to claim 8, Silverman et al discloses the flexible seal and locking mechanism being a flexible gasket held on the female end at an angle relative to normal and away from the end of the first duct.

In regards to claim 9, Silverman et al discloses the resistance to the separation of the first duct and the second duct being at least three times greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 10, Silverman et al discloses a second bead positioned after the flexible seal and locking mechanism that acting as a stop bead to ensure the second duct is properly positioned with the first duct when the first duct and the second duct are joined.

In regards to claim 11, Silverman et al discloses a third bead on the first duct located between the flexible seal and locking mechanism and the end of the first duct, wherein the third bead has a diameter that is greater than the diameter of the second bead.

In regards to claim 12, Silverman et al discloses one of the first duct and the second duct being a fitting.

In regards to claim 13, Silverman et al discloses a duct joining system comprising a first duct having a male end; a flexible seal and locking mechanism retained on the male end of the first duct; and a flexible duct that may be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism, the flexible seal and locking mechanism expanding within the flexible duct to form both a seal and a

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mechanical lock that provides resistance to the separation of the first duct and the flexible duct greater than a resistance to the joining of the first duct and the flexible duct.

In regards to claim 14, Silverman et al discloses the flexible seal and locking mechanism being a flexible gasket held on the male end at an angle relative to normal and away from the end of the first duct.

In regards to claim 15, Silverman et al discloses the resistance to the separation of the first duct and the second duct being at least three times greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 16, Silverman et al discloses a bead on the first duct located between the flexible seal and locking mechanism and the end of the first duct.

In regards to claim 17, Silverman et al discloses the first duct being a fitting.

In regards to claim 19, Silverman et al discloses an apparatus comprising a first duct; a second duct, wherein a portion of the first duct is inserted into a portion of the second duct; and means for providing a seal and a mechanical connection between the first duct and the second duct when the portion of the first duct is inserted into a portion of the second duct, wherein the means is carried by a portion of the first duct and the second duct having a raised bead into which the means is seated to form the seal and the mechanical connection when the portion of the first duct is inserted into the portion of the second duct.

In regards to claim 20, Silverman et al discloses the first duct having a depressed bead into which the means is seated to form the seal and the mechanical connection when the portion of the first duct is inserted into the portion of the second duct.

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In regards to claim 21, Silverman et al discloses the means being a flexible gasket.

In regards to claim 22, Silverman et al discloses the first duct having a first bead, the flexible gasket being mounted closer to the front of the first duct than the first bead, the flexible gasket having an angle relative to normal of the first duct.

In regards to claim 23, Silverman et al discloses the first bead comprising a circumferential groove in the second duct that has the second cross sectional, and the flexible seal and locking mechanism expands into the circumferential groove to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the second duct greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 25, Silverman et al discloses in the first bead comprising a circumferential groove in the second duct, and the flexible seal and locking mechanism expands into the circumferential groove to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the second duct greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 27, Silverman et al discloses a duct joining system comprising a first duct including a member disposed on an exterior surface of the first duct about a cross-section thereof; and a second duct including a groove extending outward from an interior surface of the second duct about a cross-section thereof, so that when the first duct is inserted into the second duct and the member is in the groove a seal and a resistance to a separation of the first duct and the second duct greater than a resistance

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to the Insertion of the first duct into the second duct is provided by the member and the groove.

In regards to claim 28, Silverman et al discloses the member comprising a flexible gasket that is at an angle relative to a normal of the first duct.

In regards to claim 29, Silverman et al discloses a stop bead on the exterior surface of the first duct.

In regards to claim 31, Silverman et al discloses one of the first duct and the second duct being a fitting.

In regards to claim 32, Silverman et al discloses a duct joining system comprising a first duct including a member on an exterior surface thereof, the member having a height from the exterior surface; and a second duct including a groove extending outward from an internal surface thereof, the groove having a depth from an interior surface thereof, wherein the depth of the groove and the height of the member are selected so that when the first duct is inserted into the second duct and the member is in the groove, a seal and a resistance to a separation of the first duct and the second duct greater than a resistance to the insertion of the first duct and the second duct is provided by the member and the groove.

In regards to claim 33, Silverman et al discloses the groove comprising a circumferential groove, and the member flexes into the circumferential groove to form both a seal and a mechanical lock that provides the resistance to the separation of the first duct and the second duct greater than the resistance to the insertion of the first duct into the second duct.

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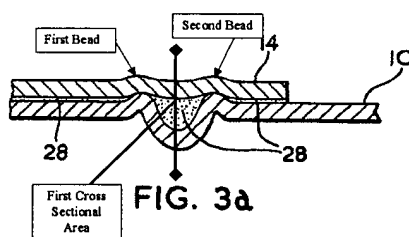
In regards to claim 34, Silverman et al discloses the member comprising a flexible gasket that is at an angle relative to a normal of the first duct.

In regards to claim 35, Silverman et al discloses the member flexes into the groove.

In regards to claim 37, Silverman et al discloses one of the first duct and the second duct being a fitting.

Claims 1-4, 6, 13, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3208136, Joslin.

In regards to claim 1, Joslin discloses a duct joining system, comprising a first duct (10) having a male end; a flexible seal and locking mechanism (28) retained on the male end of the first duct (after insertion); and a second duct (12) having a female end having a first cross sectional area and a first bead of a second cross sectional area that is greater than the first cross sectional area (see figure 3a below),



the second duct may be joined to the first duct by sliding the female end over the male end, the flexible seal and locking mechanism being compressed within the first cross sectional area, the flexible seal and locking mechanism expanding into the first bead to form both a seal and a mechanical lock that

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provides resistance to the separation of the first duct and the second duct greater than a resistance to the joining of the first duct and the second duct.

In regards to claim 2, Joslin discloses the flexible seal and locking mechanism being a flexible gasket (after solidification) held on the male end at an angle relative to normal and away from the end of the first duct.

In regards to claim 3, Joslin discloses the resistance to the separation of the first duct and the second duct being at least three times greater than the resistance to the joining of the first duct and the second duct.

In regards to claim 4, Joslin discloses a second bead (see figure 3a above) positioned after the flexible seal and locking mechanism that acts as a stop bead to ensure the second duct is properly positioned with the first duct when the first duct and the second duct are joined.

In regards to claim 6, Joslin discloses one of the first duct and the second duct being a fitting.

In regards to claim 13, Joslin discloses a duct joining system comprising a first duct having a male end; a flexible seal and locking mechanism retained on the male end of the first duct; and a flexible duct that may be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism, the flexible seal and locking mechanism expanding within the flexible duct to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the flexible duct greater than a resistance to the joining of the first duct and the flexible duct.

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In regards to claim 14, Joslin discloses the flexible seal and locking mechanism being a flexible gasket held on the male end at an angle relative to normal and away from the end of the first duct.

In regards to claim 16, Joslin discloses a bead on the first duct located between the flexible seal and locking mechanism and the end of the first duct.

In regards to claim 17, Joslin discloses the first duct being a fitting.

Claims 13, 14, 17 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 2693378, Beyer.

In regards to claim 13, Beyer discloses a duct joining system comprising a first duct (12, 13) having a male end; a flexible seal and locking mechanism (15) retained on the male end of the first duct (after insertion); and a flexible duct (10, 11) that may be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism, the flexible seal and locking mechanism expanding within the flexible duct to form both a seal and a mechanical lock that provides resistance to the separation of the first duct and the flexible duct greater than a resistance to the joining of the first duct and the flexible duct.

In regards to claim 14, Beyer discloses the flexible seal and locking mechanism being a flexible gasket held on the male end at an angle relative to normal and away from the end of the first duct.

In regards to claim 17, Beyer discloses the first duct being a fitting.

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In regards to claim 19, Beyer discloses an apparatus comprising a first duct; a second duct, wherein a portion of the first duct is inserted into a portion of the second duct; and means for providing a seal and a mechanical connection between the first duct and the second duct when the portion of the first duct is inserted into a portion of the second duct, wherein the means is carried by the portion of the first duct and the second duct having a raised bead (11e) into which the means is seated to form the seal and the mechanical connection when the portion of the first duct is inserted into the portion of the second duct.

In regards to claim 20, Beyer discloses the first duct having a depressed bead (13c) into which the means is seated to form the seal and the mechanical connection when the portion of the first duct is inserted into the portion of the second duct.

In regards to claim 21, Beyer discloses the means being a flexible gasket.

In regards to claim 22, Beyer discloses the first duct having a first bead (13a), the flexible gasket being mounted closer to the front of the first duct than the first bead, the flexible gasket having an angle relative to normal of the first duct.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joslin.

In regards to claim 15, Joslin discloses the claimed invention except for the resistance to the separation of the first duct and the second duct being at least three times greater than the resistance to the joining of the first duct and the second duct. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a resistance to the separation of the first duct and the second duct at least three times greater than the resistance to the joining of the first duct and the second duct, since the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ 402 (CCPA 1961).

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverman et al.

In regards to claims 24 and 26, Silverman et al discloses the claimed invention except for the member being a substantially triangular shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the member with a substantially triangular shape, since a change in the shape

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of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Response to Arguments

Applicant's arguments filed 10/6/03 have been fully considered but they are not persuasive. The Applicant argues:

Silverman, however, does not disclose or suggest that O-rings 116 and 118 (FIG. 10(c)) are "flexible," let alone a "flexible seal and locking mechanism retained on said male end of said first duct" as set forth in applicant's independent claims 1 and 13 or a "flexible seal and locking mechanism retained within said female end of said first duct" as set forth in independent claim 7.

The Examiner disagrees. The O-rings 117 and 118 are flexible to the extent that they are capable of being flexed or bent. The locking mechanism is the interference between the concave and convex surfaces of the ducts. Therefore, Silverman'770 has met the claim limitations.

The Applicant argues:

Therefore, with respect to claim 19, Silverman does not disclose means for providing a seal and a mechanical connection when the portion of the first duct is inserted into a portion of the second duct.... Regarding claims 27 and 32, since Silverman seals the overlapping elements with an explosive force after one element is inserted into the other, Silverman does not disclose a first duct and second duct as set forth in claims 27 and 32 so that when said first duct is inserted into said second duct and said member is in said groove a seal and a resistance to a separation of said first duct and said second duct greater than a resistance to the insertion of said first duct into said second duct is provided by said member and said groove.

The Examiner disagrees. Silverman does disclose means for providing a seal and a mechanical connection when the portion of the first duct is inserted into a portion of the second duct, and said first duct being inserted into said second duct and said member being in said groove a seal and a resistance to a separation of said first duct and said second duct greater than a resistance to the insertion of said first duct into said second duct is provided by said member and said groove. Silverman can only affectively provide means for providing a seal and a mechanical connection when the portion of the first duct is inserted into a portion of the second duct, as opposed to the first duct not being inserted into a portion of the second duct; and said first duct is inserted into said second duct and said member is in said groove a seal and a resistance to a separation of said first duct and said second duct greater than a resistance to the insertion of said first duct into said second duct is provided by said member and said groove, in the context of before and after explosively uniting the ducts.

The Applicant argues:

Regarding claim 1, the Examiner advanced that Joslin discloses a flexible seal and locking mechanism (28) retained on the male end of the first duct after insertion. However, Joslin's seal is not a flexible seal. Sealant 28 is applied as a liquid lubricant and later hardens to form a seal. Joslin does not disclose or suggest that sealant 28 is flexible after it hardens.

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The Examiner disagrees. As per the Applicant's arguments, "Sealant 28 is applied as a liquid lubricant"; meaning, it is flexible prior to hardening. The claim does not state that sealant must flexible after it hardens. Therefore, Joslin meets the claim limitation.

The Applicant argues:

Regarding claim 13, the Examiner advanced that Joslin discloses a flexible seal and locking mechanism retained on the male end of the first duct, and a flexible duct that may be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism. Applicant respectfully disagrees. Nowhere does Joslin disclose or suggest using a "flexible" duct.

The Examiner disagrees. Claim 13 recites the conditional statement, "a flexible duct that may be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism". The Examiner interprets this statement as a flexible duct that may be joined or may not be joined to the first duct by sliding the flexible duct over the flexible seal and locking mechanism. Therefore, Joslin meets the claimed limitation.

The Applicant argues:

Nowhere does Beyer disclose or suggest that elements 10 or 11 are flexible.

The Examiner disagrees. Elements 10 and 11 are flexible in their elastic regions since they are both metals. Therefore, the claim limitation has been met by Beyer.

The Applicant argues:

For example, Beyer does not disclose that gasket 15 provides a duct separation resistance that is different from

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the duct joining resistance. Further, there is no motivation founded in Beyer that would suggest one to construct gasket 15 to provide a separation resistance greater than the joining resistance.

The Examiner disagrees. Beyer recites:

As shown in Figure 2, fluid passageways *a* and *b* are provided to the chamber of the gasket 15. When, as shown in Figure 2, positive fluid pressure is applied, the chamber of the gasket 15 tends to expand and force its inner and outer lips into tight sealing engagement with the two parts 11 and 13, to advance the gasket slightly forwardly (see space *c* of Figure 2), so that its pressure heel 15c advances the locking element 14 along and towards the converging end of the cone-shaped or converging operating surface portion 11f of the housing body member or the diametrical center line of the element 14 moves from A to B. At the same time, such fluid pres-

Therefore, Beyer has met the claim limitation.

The Applicant argues:

Regarding claims 15 and 28, since Joslin does not disclose or suggest the invention as claimed in the independent claims from which claims 15 and 28 depend for reasons provided above, Joslin does not render these claim unpatentable and further discussion of this rejection is believe unnecessary at the present time.

The Examiner disagrees. Regarding claim 15, since Joslin does disclose the invention as claimed in the independent claim from which claim 15 depends for reasons provided above, Joslin does render this claim unpatentable and further discussion of this rejection is believe unnecessary at the present time.

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The Applicant argues:

Claims 24 and 26 were rejected under 35 U.S.C. §103 as being unpatentable over Silverman. et al. Since Silverman et al. does not disclose or suggest the invention as claimed in the independent claims from which these claims depend, Joslin [Silverman] does not render these claims unpatentable and further discussion of this rejection is believed unnecessary at the present time.

The Examiner disagrees. Since Silverman et al. does disclose the invention as claimed in the independent claims from which these claims depend, Silverman et al does not render these claims unpatentable and further discussion of this rejection is believed unnecessary at the present time.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M Dunwoody whose telephone number is (703) 306-3436. The examiner can normally be reached on Monday - Friday between 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on (703) 308-1159. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

.amd



Lynne H. Browne
Supervisory Patent Examiner
Technology Center 3670